USSR

INFORMATION REPORT INFORMATION REPORT

CENTRAL INTELLIGENCE AGENCY

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COUNTRY USSR (Moscow Oblast)

REPORT

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A report giving very general information on Aircraft Plant No. 43 in Moscow, for the period 1945-1956

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Abstr it

The aircraft plant is discussed in general terms of manpower, wages, power supply, security, transport methods, and raw materials. Also manufactured are gun turrets for which production data is given. An automobile type trailor chassis is also made here, description of which is given. In addition, such items as kettles, pails, radio receivers, and vacuum cleaners are also made in plant 43.

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AIRCRAFT PLANT NO. 43 IN MOSCOW

Identification and Location

1. Aircraft Plant No. 43 (Post Office Box No. 2407), located in the Oktiabreskiy rayon, Moscow, was subordinate to the Ministry of Aviation. It was bounded on the east by Yamskogo Polya 5, on the west by Yamskogo Polya 3, and on the north by ulitsa Pravdy; on the south, and adjacent to it, was Aircraft Plant No. 124 (see sketch No. 1 on page 12). It had previously been known by the name of its German proprietor, Duks. The plant manufactured aircraft turrets and small electric motors and parts and utilized scrap material in the manufacture of aluminum and stainless steel buckets, kettles, milk pails, and toys. In 1956 the plant also began to manufacture vacuum cleaners and inexpensive radio receivers as secondary products and, the same year, manufactured and assembled ten chassis and cabs for automobile trailers (refer to paragraph 5 below for additional information on the chassis).

2. The raw materials consisted of wood, plywood, copper, aluminum angles, ingots, cast iron, bronze, spools of wire, rubber tubes, flexible metal tubes, asbestos, fireproof glass, plastic tubes, sheet steel, round and square steel, special electric cable for the turrets, ordinary electric cable, alcohol, paint, enamel, gasoline, petroleum, mazut, ordinary and refractory brick, cement, lime, bearings, canvas, leather, radio tubes, and coal. Most of the raw material was shipped in by rail whereas the outgoing shipments were generally transported by truck; 25X1 the plant was not dependent on foreign imports.

Water and Electric Power Supply

3. Water was piped into the plant from a water reservoir (Point No. 6 on sketch, page 12). Electric power was furnished by the Moscow Hydroelectric Plant (Moskovskaya Gorodskaya Energicheskayastansia -- MOGES) which, in turn, was supplied by a power plant in Kashira (N 54-50, E 38-12). The plant had four substation transformers (these are described in legend under points Nos. 18, 25 bis, 34 and 45). Two underground electric cables entered the plant. In 1947 the plant used 23,000 kilowatts of power daily 25X1 There was no power shortage except occasionally during the winter months when electricity was rationed. The Moscow Hydroelectric Plant controlled the electric power for industrial use and did not favor war industries.

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Transportation

4. A single track, Soviet wide-gauge railroad line entered the plant and connected with the main railroad line between the stations of Beolorusskiy and Rzhevskiy. The rolling stock consisted of small, old steam locomotives and ordinary railroad cars and flat cars, all in good condition. No highway entered the plant area and trucks and other vehicles entered from ulitsa Pravdy. The plant had two Mack trucks and about 30 ZIL trucks, of three and five ton capacity, for transporting manufactured products.

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Production

5. The plant produced and assembled three turret units (five turrets to a unit)--complete with automatic firing mechanism and electric motors--per month; in other words, a total of 15 turrets; also large quantities (figures not known) of small electric motors and spare parts for the turrets, some of which were shipped to other plants. (The guns mounted in the turrets came from other plants; they were of about 30 mm caliber and one meter or less in length.) Production figures for other manufactured items, i.e., kettles, buckets, pails, vacuum cleaners, and radio receivers, not known. In May 1956, at the request of the Ministry of Agriculture, the plant began to manufacture automobile trailer-type chassis. The chassis were described as being about five meters long with ordinary wheels; installed in the center was a so-called cockpit fitted with many (sic) control panels and a neck-high, form-fitting armored seat, similar to those in aircraft; the upper portion of the cockpit was of transparent plexiglass. It was said that two-gun turrets, similar to those in aircraft, would be installed both in the front and rear of the trailer and that these could be controlled from the cockpit. As of December 1956, the plant had manufactured and assembled ten chassis of the type described above.

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Organization

6. The plant had a director, a chief engineer and assistant engineer, the chiefs of finance, materiel and personnel, shop foremen, and Party and Union secretaries. Air force officers inspected and passed on all manufactured items before they could be shipped out of the plant. The machine shop, located on the second floor of building designated as No. 44, had the following organizational setup: a shop chief with two assistants, a Party and a Union secretary, chief of control, a brigade of electrical repairmen and a brigade of mechanics, eight 20-man groups of skilled workers (machinists, operators of planers, lathes, milling and grinding machines, and specialists in galvanizing), with a foreman in charge of each group.

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Personnel and Working Conditions

7. Although personnel statistics were kept secret, estimated number of plant employees at more than 6,000; no convicts or prisoners were employed. The plant worked on a three-shift, eight-hour schedule five days a week and six hours on Saturdays. Employees were generally permitted to take their vacations when they chose, provided the work schedule was not interrupted; employees with less than three years' service were given 12 days annual leave and those with more than three years, 15 days. Employees engaged in performing work injurious to health were given 24 days leave each year. Health conditions in the plant were good; each shop was equipped with a first-aid kit and a practical nurse was on duty to administer first aid to the sick and injured, whereafter they were given medical attention in the clinic and infirmary. 25X1

Wages

8. Inasmuch as Plant No. 43 was engaged in manufacturing military equipment, the employees were paid higher wages than in other plants and also received bonuses at the end of the year. The monthly wages were as follows:

Shop chiefs	- 1,200 rubles, plus a bonus for fulfilling plans
Assistant shop chiefs	- 1,150 rubles plus bonus
Master mechanics	- 1,100 rubles plus bonus
Brigade chiefs	- 1,000 rubles plus bonus if norms were attained
Shop mechanics	- 1,000 rubles plus bonus
Electricians	- 560 rubles; however, the electricians were paid extra for repair jobs which brought their monthly wages up to about 1,400 rubles.

Seventh, sixth, fifth, fourth and third category workers received 1,700, 1,450, 1,110, 850, and 500 rubles, respectively; apprentices were paid 280 rubles a month.

Plant Security (points indicated below are identified in legend, pages 6 to 11)

9. The plant had a semi-militarized guard detail, consisting of some 35 male and female employees, all armed with pistols or automatic rifles. On entering and leaving the plant, employees were obliged to show their passes to guards posted at the entrance gates and in the control booths (No. 11 and No. 23). At night a reinforced guard detail patrolled the plant area and nighttime security was further ensured by sentry dogs. Admittance to the following workshops or installations was restricted to personnel employed therein: (a) the testing laboratory and the turret-assembly shops located on the first, second and third floors of the building designated as No. 26; (b) the electric shop,

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located on the third floor of building designated as No. 25, where the cables and terminals of the turret apparatus was assembled; (c) the underground firing range (No. 4 on sketch). A fire squad, composed of some 45 firemen served both Plant No. 43 and Plant No. 124. The fire-fighting equipment consisted of two fire trucks; all the shops, moreover, were equipped with fire extinguishers, boxes of sand and hoses.

Packing

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10. Small electric motors and parts were packed in wooden boxes for shipment and the assembled turrets were loaded into trucks covered with dark green canvas; one or two guards accompanied the shipments.

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Legend for Layout of Aircraft Plant No. 43 (Refer to sketch on page 12)

1. Plant personnel office. This was a small, square, three-story brick building.

2. An L-shaped, three-story brick structure. On the first floor were the kitchen and dining room; on the second, offices for the director, his assistant, and the plant engineers; on the third, the accounting offices and the secret section.

3. Main gate

4. Underground firing range where the automatic firing mechanism for the aircraft armament was tested.

5. A small one-story building which provided access to the underground testing range (No. 4 above).

6. Central water reservoir

7. Guardhouse located alongside the gate (No. 8 below) used for vehicular traffic

8. Vehicular entrance

9. Control office. All incoming and outgoing material was checked at this point.

10. A four-story building which housed a clinic and infirmary for employees of Aircraft Plants Nos. 43 and 124.

11. Control booth. The passes of all employees entering and leaving the plant were checked at this point.

12. Building under construction (no details known).

13. Storehouse. This was a small one-story brick structure in which carbide gas, used for autogenous welding, was stored. One employee worked in this building.

14. Storehouse where bottled oxygen, used for autogenous welding, was kept. This was a small one-story brick structure. Three employees worked in this building.

15. Warehouse. This was a tile-roofed, two-story brick building which adjoined the machine shop (No. 16 below). Stocks of ferrous metals, nuts, washers, gears, and all kinds of parts produced in the plant were stored on the first floor and, on the second, fabrics, leather, felt, rubber, cables, light bulbs, and other items of similar nature.

16. Machine shop. This was a one-story, rectangular-shaped brick building measuring about 65 x 50 meters and one of the largest structures in the plant. It had canvas-covered wooden rafters surfaced with tar, pitch and sand. The machinery, mainly of Soviet and German make, consisted of lathes, planes, milling machines and grinders. The machine parts and gears produced in the machine shop were transferred to the galvanizing shop (No. 28 below). This shop employed many (sic) workers;

17. Office building. This was a rectangular-shaped, two-story brick structure which adjoined the machine shop (No. 16 above). On the first floor were the control office, a tool storage room, mechanics' quarters, and toilets and, on the second, quarters for the guards and offices for engineers.

18. Power station, designated as No. 4745 of the Moscow hydroelectric plant (Moskovskaya Gorodskaya Energicheskayastansia - MOSGES); it was a newly-built station which supplied current for buildings numbered 15, 16, 17, 18, 19, 20, 21, 26, 27, 28, 29, 30 and 31 and also for the sub-station, designated as No. 25 bis. on sketch. This was a two-story brick building, about 22 x 17 x 12 meters in size, with a small basement wherein were stored storage batteries for use in event of a power shortage. The equipment included three transformers -- one 1,000-kilowatt Soviet-made transformer with automatic oil-operated circuit breakers and two smaller transformers of some 500 or 750 kilowatt capacity -- and the incoming electric potential of 6,600 volts was stepped down to 220 volts for use in the plant. This station was connected with the plant's old power station (indicated as No. 45 on sketch) so that, in the event of damage to the power lines, either station could supply power for the plant. Two employees were on duty in the power station during each of the three shifts.

19. Repair and maintenance shop. This was an L-shaped brick structure with a wooden roof covered with a special canvas which had been surfaced with tar, sand and pitch. The shop was equipped with drills, a planer and two small lathes. The some 50 employees included repairmen, plumbers and technicians.

20. Warehouse. This was a recently-constructed, one-story, rectangular-shaped brick building, about 40 x 10 x 6 meters in size, without a basement. Small quantities of paint, gasoline, oil, dry goods, and other supplies were stored in the warehouse.

21. Electric repair shop. This was a one-story brick structure measuring about 15 x 15 x 4 meters. This shop, devoted to the repair of electric motors and other electrical equipment, employed about 60 persons.

22. A small stucco-coated frame building where workers deposited their personal effects (books, briefcases, bags and packages) since they were forbidden to take these items into the plant. In this building, also, photographs were made for employees' passes, inasmuch as photographs made elsewhere were not acceptable. Two employees worked in this building.

23. Control booth, where employees were checked as they entered and departed the plant. An armed female employee was stationed in the control booth.

24. Office building. This was a two-story brick structure, about 20 x 15 x 9 meters in size, with a wooden roof topped with sheet iron. On the first floor were located the office of the chief of guards, the pass-issuing office, the intercom control room, the physical culture office, and the cashier's office. On the second floor were located the offices of the Party secretary and his assistant and the offices of the Union and the Komsomol secretaries. A total of about 25 employees worked in this building.

25. A rather large, three-story brick building with a red sheet metal roof. On the first floor were located (a) a machine repair shop, equipped with lathes, milling machines and planers, and (b) a power station (indicated on sketch as No. 25 bis.), designated as MOGES sub-station No. 1224; the power station, equipped with a 250-kilowatt Soviet-made transformer, switchboards, oil-operated circuit breakers and 200-ampere condensers, supplied power for shops numbered 1, 2, 10, 11, 22, 23, 24, 25, and 32. On the second floor were located the offices of the planning engineers and, on the third, the electric shop. A portion of the second and third floors was occupied by a laboratory where the hardness of metals was tested. The electric shop, equipped with winding machines and electric testing devices, produced coils, relays, control boxes and related items and assembled the terminal cables for the automatic firing mechanism installed in the aircraft turrets.

26. A four-story, glass-roofed, brick building, measuring about 50 x 50 x 24 meters, which contained the following workshops:

First floor: (a) A laboratory, where the electric motors which operated the firing mechanism on the aircraft were tested for temperature and atmospheric pressure; here, also, the assembled automatic turrets were tested.

(b) Shipping office; from this office the disassembled aircraft armament, complete with automatic mechanism, was sent to other plants (names unknown).

Second floor: (a) Assembly shop, where the machinery for the turrets was assembled

(b) Machine shop. This shop, known as machine shop No. 8, was a secret shop, subordinate to the OKB; it was a part of Aircraft Plant No. 43 up until approximately 1950, when all the equipment and most of its personnel were transferred to the Experimental Aircraft Plant in Tushino. During the time this secret shop was located in Aircraft Plant No. 43, its personnel was doing research on and copying turrets on US-made aircraft; the employees in shop No. 8 were better paid than other plant workers and the director and administrative personnel were not subordinate to their corresponding numbers in Plant No. 43.

Third floor: Assembly shop, where the turret machinery was assembled and tested.

Fourth floor: Electric motor-winding and assembly shop. This shop, known in the plant as Shop No. 24, produced different types of electric motors [redacted] in quantity sufficient, not only for the plant's needs, but for shipment to other plants. The motors were tested in a laboratory located on the same floor and were then transferred to the two assembly shops located in the same building. Motors which were to be shipped out of the plant were marked with a five-pointed star.

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In 1950 two naval officers visited this building [redacted] they were interested in some part being manufactured in one of the workshops located in this particular structure.

27. Machine shop and X-ray laboratory. This was a one-story, rectangular-shaped brick building, about 50 x 45 x 8 meters in size, with a wooden roof covered with canvas coated with tar, pitch and sand. Parts for electric motors, gears and other items were produced in the machine shop which contained German and Soviet-made turret lathes, grinding lathes, milling machines and gear-making apparatus. In the X-ray laboratory, material which came to the plant was inspected by means of X-rays.

28. The galvanizing shop

29. The forging and tempering shop

30. The steel-smelting shop. The shops indicated as Nos. 28, 29 and 30 were located in a one-story metal-roofed building. The forging and tempering shop, which occupied about half the space in this building, was equipped with five Soviet P.N. 12 (sic) electric furnaces and one automatic US-made furnace, five hammers and an unknown number of heavy presses. The steel-smelting shop, constructed in 1956, had three modern electric furnaces; as of December 1956 [redacted] only one furnace was operating on a test basis. 25X1 25X1

31. Machine shop. This was a one-story, rectangular-shaped brick building, about 70 x 15 x 12 meters in size, with a metal roof covered with uralite. The shop, equipped with a high-frequency electric smelting furnace, worked a special material, called electron (sic), for the turret machinery.

32. A four-story brick building with a red sheet metal roof. On the first floor were two machine shops, the telephone exchange and the old central heating system for the plant; on the second, a technical school for plant employees and a small assembly shop where bakelite pieces were assembled; on the third, quarters for unmarried male employees; on the fourth, were quarters for female employees and stockrooms with stores of masks, suits and boots made of a oiled fabric impervious to gases.

33. A one-story, sheet metal-roofed building which contained two Soviet-made air compressors. Two employees worked in this building.

34. Power station, designated as MOGES substation No. 3100, which supplied power to shops numbered 33, 35, 36 and 37. This was a one-story, rectangular-shaped, sheet metal roofed, brick building which adjoined the building indicated on sketch as number 35. It contained a transformer and oil-operated circuit breakers; the voltage was stepped down from a high of 6,600 volts to 380.

35. Aluminum-casting shop. This was a one-story, rectangular-shaped, sheet metal roofed, brick building. The equipment included three Soviet-made electric furnaces in good repair, one automatic electric furnace used for tempering, four modern Czechoslovakian-made machines for turning aluminum pieces, and a saw for cutting aluminum.

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[redacted] 25X1

35 bis. A one-story structure which housed the offices for the aluminum-casting shop (No. 35 above).

36. Foundry. This was a one-story, sheet metal roofed, rectangular-shaped, brick structure measuring about 15 x 10 x 6 meters. It did not have a basement. The equipment included a casting mold, one meter in diameter. About 15 employees worked in the foundry.

37. A one-story, sheet metal roofed, brick structure which was known as the new air-compressor shop; it adjoined the building indicated as No. 38 below. The shop contained two powerful Soviet-made compressors equipped with 100 and 76 kilowatt electric motors and one small German-made compressor. Five employees worked in this shop.

38. A two-story, sheet metal roofed, brick structure. On the first floor was a shop, equipped with modern Soviet-made presses, where bakelite pieces were polished; on the second floor, a repair shop where the firing mechanism in the aircraft turrets was repaired. The work was done by work brigades (sic) who also were sent to other plants to repair the same devices.

39. Freight-loading platform equipped with one five-ton and one 500-kilogram crane.

40. Ammunition depot where the ammunition used in the underground firing range (No. 4 above) was stored. This was a one-story, rectangular-shaped brick structure, about 7 x 5 x 4 meters in size.

41. Unused passageway

42. Passageway

43. A square, two-story, sheet metal roofed brick structure, about 20 x 20 x 12 meters in size, which adjoined buildings indicated on sketch as Nos. 38 and 44. On the first floor was the printing and die-stamping shop, equipped with Soviet and German made presses and dies; on the second floor was the sheet metal shop, equipped with Soviet and German-made hydraulic hammers, lathes and emery wheels.

44. A three-story, rectangular-shaped, sheet metal roofed brick structure, about 1,500 meters square. On the first floor was a warehouse where iron, sheet metal and ferrous metals were stored. The second floor housed a machine shop where dies were made for presses and for extruded aluminum sections; the some hundred pieces of machinery included lathes, milling machines, planes, bridge-planes and drills. In a small room adjoining the machine shop were medium precision machines [redacted] these machines, the best equipment in the plant, functioned only when the temperature in the shop was maintained at 20 degrees Centigrade. On the third floor was the tool shop which produced drill bits, dies, gauges and other tools for the use of Plant No. 43 as well as for other plants; the machinery included lathes, milling machines, power files and many other (unspecified) machines. Until the year 1952, bomb racks (refer to sketch on page 13 for general idea of their type) were also manufactured in the machine shop. 25X1

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[redacted]

45. The plant's old power station, designated as MOGES Station No. 2500. This was a two-story, sheet metal roofed structure with a small basement. The station furnished power for substation No. 3100 (point No. 34 above), shops numbered 38, 43, 44, 46, 47 and 48, and also for Aviation Plant No. 124, located south of Plant No. 43. The station had three transformers (capacity unknown) with automatic oil-operated circuit breakers, and the voltage was stepped down from a high of 6,600 volts to 220 volts. [redacted] 25X1

[redacted]

Storage batteries were stored in the basement for use in case of power failure. The station had two switch panels, one for Aircraft Plant No. 43 and the other for Aircraft Plant No. 124; three employees, two from Plant No. 43 and one from Plant No. 124, worked in the power station.

46. Carpentry shop. This was a rectangular-shaped, two-story brick structure, about 30 x 15 x 12 meters in size, with a uralite roof. The shop made wooden boxes for Plant No. 43 and for other plants as well.

47. A three-story, rectangular-shaped, sheet metal roofed brick structure, about 30 x 13 x 15 meters in size. The first floor was occupied by a new shop (not otherwise described) which, in the summer of 1956, began to manufacture and assemble automobile trailer-type chassis (see paragraph 5, page 3 , for description of the chassis). On the second floor were located a machine shop, a galvanizing shop and offices; the machine shop was equipped with four surface truing devices, three other truing machines (not further described), and a milling machine. On the third floor were offices and the printing section.

48. A two-story, sheet metal roofed brick building in which was located the plant's central heating system; it had one 30-meter-high smokestack.

49. Railroad gate and guardhouse.

50. Brick smokestack, about 40 meters high.

51. Garage and repair and maintenance shop

52. Firehouse--a two-story building. Some 45 firemen, who served both Aircraft Plants Nos. 43 and 124, were on duty.

53. Club for plant employees.

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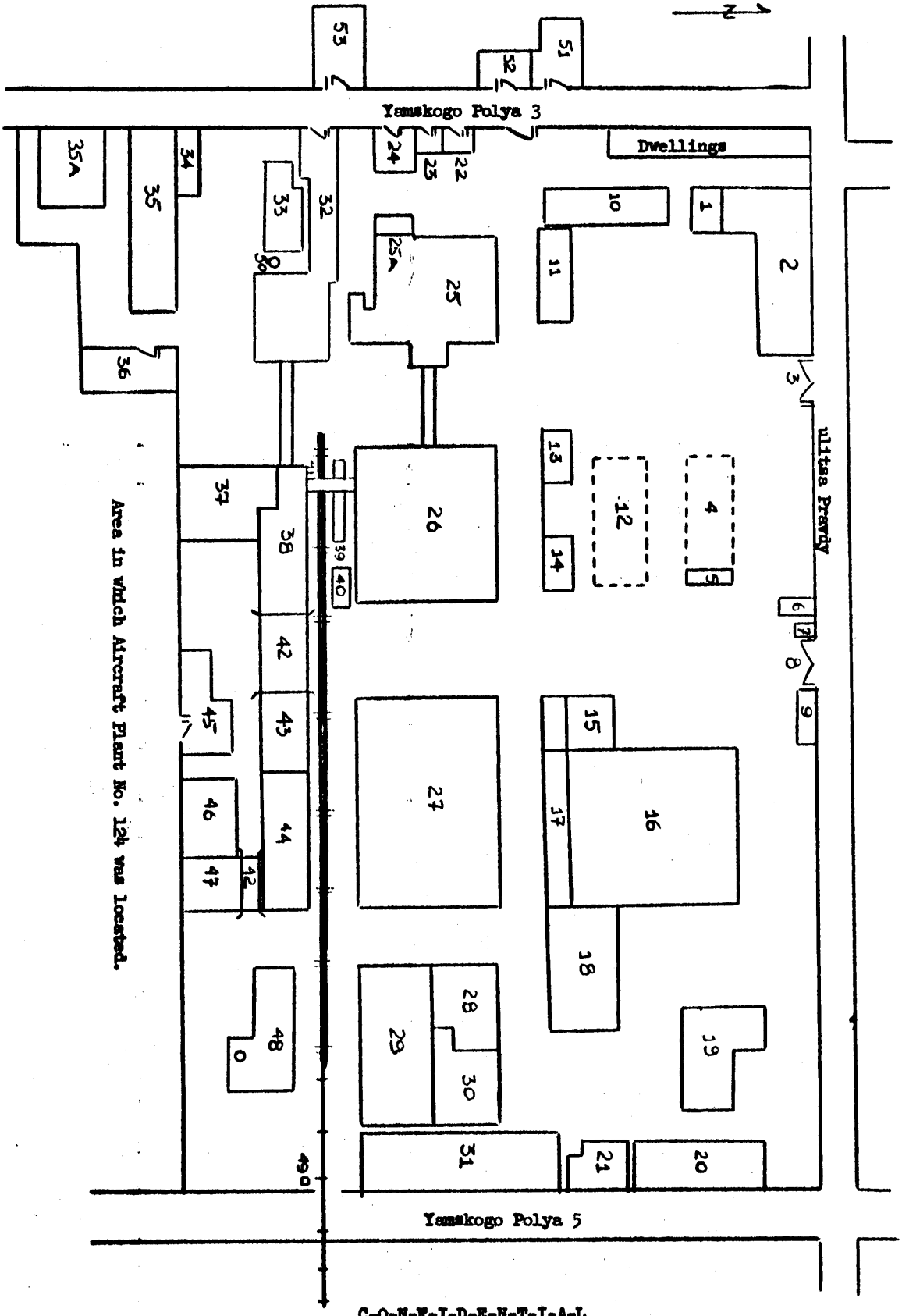
Sketch Showing Layout of Aircraft Plant No. 43



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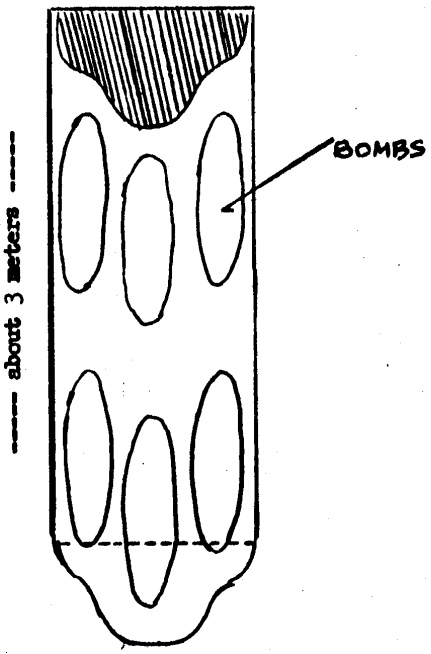
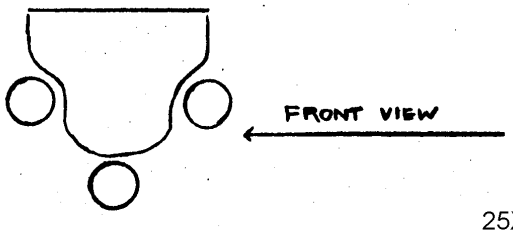
Sketch depicting the type of bomb racks manufactured in Aviation Plant No. 43 prior to 1952.





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